

REMARKS/ARGUMENTS

Claims 1-21 remain in the application.

Claims 1, 5, 8 and 16-20 are currently amended.

Claim 4 is cancelled.

5 **Claim Rejections Under 35 USC § 102**

Claims 1-3, 6 and 16 were rejected under 35 USC § 102(e) over US Patent 6,749,160 to Richter.

The present invention, as recited in amended claim 1, is not anticipated by Richter, which teaches a support arm 10 consisting of an aluminum rod 12 covered by a corrugated flexible plastic tube 11. Annular plug members 12a and 12b are disposed on the aluminum rod 12 at the ends. The corrugated plastic tube 11 is supported by the annular plug members 12a and 12b at a given radial distance from the aluminum rod 12. Column 4, lines 24-32.

“The support plate 13 is provided with a sleeve 14 in which the other end of the support arm 10 is received and firmly connected to the support plate 13.” Column 4, lines 33-35
15 (emphasis added).

The examiner has not accepted the applicant’s argument that “fused” is not synonymous with “firmly connected” of Richter. The applicant continues to assert that “fused” distinguishes from Richter.

However, Richter clearly fails to anticipate the present invention, which is a flexible support apparatus having a permanently bendable continuously solid metal rod having a first end fused directly to the support base with a **weld joint** formed directly there between, and having a second end fused directly to a mounting bracket with another **weld joint** formed directly there between.

Obviously, Richter only teaches the “end of the support arm 10 is received and firmly connected to the support plate 13.” Column 4, lines 33-35. Clearly, the term “received” and the phrase “firmly connected” do not in any way anticipate the claimed invention having a “weld joint” formed between the metal rod’s first and second ends and the support base and mounting bracket, as recited in claim 1.

In contrast to the present invention, Richter does not even discuss attachment of the aluminum rod 12.

Rather, in Figure 2 Richter shows the ends of the aluminum rod 12 being extended into an enlarged area of the annular plug members 12a and 12b proximate to the floor of the respective sleeves 5 and 14. The aluminum rod 12 has a reduced diameter or “necked-down” portion passing through the narrow inside diameter of the plug members 12a, 12b, and then a flared portion within the enlarged area of the annular plug members 12a and 12b proximate to the floor of the respective sleeves 5 and 14. Thus, Richter teaches the ends of the aluminum rod 12 being “swaged” into the respective annular plug members 12a and 12b. The annular plug members 12a and 12b are in turn “received and firmly connected to the support plate 13.” Column 4, lines 33-35.

Clearly Richter cannot teach a “weld joint” at least because Richter instead teaches “swaging” of the aluminum rod 12.

For at least the above reasons, claim 1 is clearly not anticipated by Richter, and is believed to be allowable. Therefore, the applicant declines to amend claim 1 at this time.

Claims 2-3 and 6 are allowable at least as depending from allowable claim 1.

Claim 3 is further allowable independently of allowable base claim 1 as reciting “each of the opening in the support base and the opening in the mounting bracket further comprises a second larger opening into which opposite ends of the flexible sheath are inserted.”

Richter only teaches the support plate 13 having a “sleeve 14” into which the “end of the support arm 10 is “received” and “firmly connected” to the support plate 13.” Column 4, lines 33-35 (emphasis added).

Clearly such a limited description of the support plate 13 having a “sleeve 14” cannot anticipate “a second larger opening” in each of the opening in the support base and the opening in the mounting bracket, as recited in claim 3.

In contrast to the sleeves 5 and 14 of Richter, the opening in the support base and the opening in the mounting bracket each having a “second larger opening into which opposite ends of the flexible sheath are inserted,” as recited in claim 3.

In Figure 2 Richter clearly teaches that such “second larger opening” is not anticipated. Rather, in Figure 2 Richter clearly shows that the “sleeve 14” is a constant inner diameter from the opening to the floor to receive the annular plug member 12b. Rather, the annular plug member

12b is stepped with a first larger diameter to mate with the "sleeve 14," and a second smaller diameter to mate with the corrugated plastic tube 11. Similarly, the "sleeve 5" having a constant diameter from the opening to the floor to receive the annular plug member 12a. The annular plug member 12a is similarly stepped with a first larger diameter to mate with the "sleeve 5," and a
5 second smaller diameter to mate with the corrugated plastic tube 11.

Thus, Richter even teaches away from the opening having a "second larger opening into which opposite ends of the flexible sheath are inserted," as recited in claim 3.

For at least the above reasons, claim 3 is not anticipated by Richter, and is believed to be allowable independently of allowable base claim 1.

10 **Claim 16** differs in scope from allowable claim 1. However, the above arguments and reasons for allowance directed to claim 1 are sufficiently applicable to claim 16 as to make repetition unnecessary. Thus, for each of the reasons above, claim 16 is believed to be allowable over the cited art.

Furthermore, Richter does not describe in any way how the "end of the support arm 10" is
15 "firmly connected" to the support plate 13. Column 4, lines 33-35.

However, Richter does clearly teach the aluminum rod 12 is not in any way connected to the support plate 13. Rather, as shown in Figure 2, the aluminum rod 12 is connected (apparently by swaging) to the "annular plug members 12a and 12b" which are in turn "firmly connected" in an unknown manner to the support plate 13.

20 Thus, Richter clearly fails to anticipate "fusing" first and second ends of the metal rod in the tubular aperture of the support base and in the tubular aperture of the mounting bracket, as recited in claim 16; at least because the aluminum rod 12 is not in any way connected to the support plate 13.

For at least the above reasons, claim 16 is clearly not anticipated by Richter, and is believed to
25 be allowable. Therefore, the applicant declines to amend claim 16 at this time.

Claim Rejections Under 35 USC § 103

Claims 4, 5, 8-10, 13-15 and 17-21 were rejected under 35 USC § 103(a) over US Patent 6,749,160 to Richter in view of US Patent 4,020,575 to Kruger, et al.

Claim 4, 5 and 8 all depend from base claim 1.

Claim 1 is not made obvious by Richter, which fails to disclose or suggest a **weld joint** between the first and second ends of the metal rod and the respective support base and mounting bracket, as recited in claim 1. Rather, as discussed above, Richter only teaches the “end of the support arm 10 is received and firmly connected to the support plate 13.” Column 4, lines 33-35.

5 As discussed above, the aluminum rod 12 of Richter not attached in any way to the respective sleeves 5 and 14. Rather, the ends of the aluminum rod 12 are swaged to the respective annular plug members 12a and 12b. See, e.g., Figure 2. Then, the annular plug members 12a and 12b are “received and firmly connected to the support plate 13.” Column 4, lines 33-35.

10 For at least the above reasons claim 1 is not made obvious by Richter, and claim 1 is believed to be allowable there over.

Kruger fails to provide the deficiencies of Richter. Kruger fails to disclose or suggest a “**weld joint** formed directly between the first end of the metal rod and the support base,” and a “**weld joint** formed directly between the second end of the metal rod and the mounting bracket,” as now recited in claim 1.

15 Kruger teaches a badge formed of an envelope 12 having a front panel 14 with a major flap 16 and a minor flap 18. Column 1, line 63-column 2, line 5.

The front panel 14 with a major flap 16 and a minor flap 18 are all formed in a single sheet of acetate or similar transparent stiffly flexible plastic. Column 2, lines 6-8.

20 A clamping panel 20, also of acetate or other flexible plastic, is secured flat against the flap 16. The clamping panel 20 is formed with a pair of spaced apertures 22 (FIG. 2) in a V-shaped slit 24. A safety-pin-like fastener 28 of wire is formed with a base run 30 opposite a pin run 36. A distal end of the tongue 38 of the V-shaped slit 24 is lifted up from the clamping panel 20 and is inserted between the base run 30 and the pin run 36 of the fastener so that the base run 30 is threaded into and out of the apertures 22 respectively in final assembly. Column 2, lines

25 9-30.

“Thereafter, the clamping panel 20 is secured as by ultrasonic welding or the like, directly against the major flap 16. This is as shown in the hatched area S in FIG. 1. It is important that the sealed area include at least some of the tongue 38 so that the tongue may not thereafter lift up and permit the escape of the fastener 28, as will be understood.” Column 2, lines 31-37.

Trapping of the base run 30 of the fastener 28 between the clamping panel 20 and the flap 16 is “readily accomplished by the sealing process.” The capture of the base run 30 through the apertures 22 “immobilizes the pin with the fastener 28.” Once the pin run 36 is applied to the clothing, the envelope 12 is not readily given to pivoting about. This keeps the envelope and material therein well oriented. Column 2; lines 38-45.

Thus, Kruger clearly fails to provide the deficiencies of Richter at least because Kruger fails to disclose or suggest a “**weld joint**” formed directly between the ends of the metal rod and the respective support base and mounting bracket, as recited in claim 1.

Rather, Kruger only teaches welding the plastic clamping panel 20 to the major flap 16. See, e.g., column 2, lines 31-37. The base run 30 of the fastener 28 is only “captured” between the clamping panel 20 and the flap 16, which is “readily accomplished by the sealing process.” Column 2, lines 38-45. Thus, Kruger only teaches plastic-to-plastic welding that captures the metal base run 30 of the fastener 28. Kruger fails to disclose or suggest any welding of the metal base run 30 of the fastener 28 to anything. Kruger only teaches welding plastic to plastic.

Furthermore, Kruger requires the base run 30 to be “bent in the form of a sine wave” that “further immobilizes the fastener so that the pin run does not fold down against the back of the badge which would make it awkward to attach to clothing.” Column 2, lines 46-52. This need to “further immobilizes the fastener” emphasizes the fact that the metal base run 30 of the fastener 28 is not welded to either the clamping panel 20 or the flap 16. Instead, the base run 30 of the fastener 28 must be bent in to a sine wave to keep from rotating between the clamping panel 20 and the flap 16.

Thus, Kruger fails to disclose or suggest a “weld joint” between first and second ends of the solid metal rod and the respective support base and mounting bracket, as recited in claim 1. Rather, by teaching the base run 30 of the fastener 28 being “captured” between by the sealed area between the clamping panel 20 or the flap 16, Kruger actually teaches away from the “metal rod having a first end fused directly to the support base; and having a second end fused directly to a mounting bracket,” as recited in claim 1.

For at least the above reasons, claim 1 is not made obvious by Richter and Kruger, and claim 1 is believed to be allowable there over.

Claim 4 is cancelled whereby the rejection is made moot.

Claims 5 and 8 are all allowable at least as depend from allowable base claim 1.

Claim 5 is allowable at least as depending from allowable claims 2 and 3 allowable base claim 1.

Furthermore, Claim 5 is further allowable independently of allowable claims 1, 2 and 3. Claim 5 differs in scope from allowable claim 1. However, the above arguments and reasons for allowance directed to claim 4 are sufficiently applicable to claim 5 as to make repetition unnecessary. Thus, for each of the reasons above, claim 5 is believed to be allowable independently of allowable base claim 1.

Claim 8 is allowable at least as depending from allowable claim 4.

Claim 8 is further allowable independently of allowable claim 4 as reciting "each of the metal rod; the support base and the mounting bracket are formed of a material that is metal-to-metal weldable by conventional means."

In contrast, as discussed herein above, Richter fails to disclose or suggest the aluminum rod 12 being "fused" to the sleeve 14 of the support plate 13. Richter further fails to disclose or suggest the aluminum rod 12 being "directly" connected to the sleeve 14 of the support plate 13. Rather, Richter only teaches the aluminum rod 12 being "swaged" to the annular plug members 12a and 12b, which are then in turn "firmly connected" in an unknown manner to the support plate 13.

Kruger fails to provide the deficiencies of Richter at least as to "each of the metal rod, the support base and the mounting bracket are formed of a material that is metal-to-metal fusible by conventional means," as recited in claim 8. Rather, Kruger only teaches a major flap 16 formed of a sheet of acetate or similar transparent stiffly flexible plastic (column 2, lines 6-8) and a clamping panel 20; also of acetate or other flexible plastic (column 2, lines 9-30), which is secured flat against the flap 16 by "ultrasonic welding or the like" (column 2, lines 31-37).

Thus, at least because Kruger only teaches welding of "acetate or similar transparent stiffly flexible plastic," Kruger clearly fails to disclose or suggest any members being "formed of a material that is metal-to-metal fusible by conventional means," as recited in claim 8.

For at least the above reasons, claim 8 is not made obvious by Richter and Kruger, and is believed to be allowable independently of allowable claim 4 and allowable base claim 1.

Claim 9 differs in scope from allowable claim 1. However, the above arguments and reasons for allowance directed to claim 1 are sufficiently applicable to claim 9 as to make repetition unnecessary. Thus, for each of the reasons above, claim 9 is believed to be allowable. Therefore, the applicant declines to amend claim 9 at this time.

5 **Claim 10** is allowable at least as depend from allowable base claim 9.

Claim 10 is further allowable independently of allowable base claim 1 as reciting “the weld joints formed between the metal rod and each of the support base and the mounting bracket further comprise ultrasonic weld joints.”

10 As discussed herein above regarding claim 4, Richter only teaches the ends of the aluminum rod 12 being “swaged” into the respective annular plug members 12a and 12b, with the annular plug members 12a and 12b being “firmly connected” in an unknown manner to the support plate 13. See, e.g., Figure 2. Thus, Richter fails to disclose or suggest weld joints formed between the metal rod and each of the support base and the mounting bracket,” as recited in claim 4.

15 Also, Kruger only teaches the plastic clamping panel 20 being “welded” to the flap 16. As taught by Kruger, the metal base run 30 of the fastener 28 is not welded to either the clamping panel 20 or the flap 16.

 Thus, Kruger fails to provide the deficiencies of Richter as to “the weld joints formed between the metal rod and each of the support base and the mounting bracket further comprise
20 ultrasonic weld joints,” as recited in claim 10.

For at least the above reasons, claim 10 is not made obvious by Richter and Kruger, and is believed to be allowable independently of allowable base claim 9.

Claims 13-15 are all allowable at least as depend from allowable base claim 9.

25 **Claim 15** is further allowable independently of allowable base claim 9 as reciting “each of the support base and the mounting bracket further comprises a respective counter-bore substantially concentric with the respective tubular aperture and sized to admit the flexible plastic sheath.”

As discussed herein above regarding claim 3, in Figure 2 Richter clearly teaches that such “counter-bore” is not anticipated. Rather, in Figure 2 Richter clearly shows that the “sleeve 14” is

a constant inner diameter from the opening to the floor to receive the annular plug member 12b.

Rather, the annular plug member 12b is stepped with a first larger diameter to mate with the "sleeve 14," and a second smaller diameter to mate with the corrugated plastic tube 11. Similarly, the "sleeve 5" having a constant diameter from the opening to the floor to receive the annular plug member 12a. The annular plug member 12a is similarly stepped with a first larger diameter to mate with the "sleeve 5," and a second smaller diameter to mate with the corrugated plastic tube 11.

Thus, Richter even teaches away from the opening having a "counter-bore substantially concentric with the respective tubular aperture and sized to admit the flexible plastic sheath," as recited in claim 15.

Kruger obviously fails to provide the deficiencies of Richter as to the "counter-bore" at least because Kruger only teaches the envelope 12 having a flat front panel 14 with flat major and minor flaps 16 and 18 all formed in a single sheet of acetate or similar transparent stiffly flexible plastic (column 2, lines 6-8), and flat clamping panel 20 also formed in a sheet of acetate or other flexible plastic (column 2, lines 9-30).

For at least the above reasons, claim 15 is not anticipated by Richter, and is believed to be allowable independently of allowable base claim 9.

Claims 17-21 are allowable at least as depending from allowable base claim 16.

Claim 17 is further allowable independently of allowable base claim 1 as reciting "ultrasonically welding the first and second ends of the metal rod in the respective tubular apertures of the support base and mounting bracket."

Claim 17 differs in scope from allowable claim 4 as discussed herein above. However, the above arguments and reasons for allowance directed to claim 4 are sufficiently applicable to claim 17 as to make repetition unnecessary. Thus, for each of the reasons above, claim 17 is believed to be allowable independently of allowable base claim 16.

As discussed herein above regarding claim 4, Richter only teaches the ends of the aluminum rod 12 being "swaged" into the respective annular plug members 12a and 12b, with the annular plug members 12a and 12b being "firmly connected" in an unknown manner to the support plate 13. See, e.g., Figure 2. Thus, Richter fails to disclose or suggest weld joints formed

between the metal rod and each of the support base and the mounting bracket,” as recited in claim 4.

Also, Kruger only teaches the plastic clamping panel 20 being “welded” to the flap 16. As taught by Kruger, the metal base run 30 of the fastener 28 is not welded to either the clamping panel 20 or the flap 16.

Thus, Kruger fails to provide the deficiencies of Richter as to “ultrasonically welding the first and second ends of the metal rod in the respective tubular apertures of the support base and mounting bracket,” as recited in claim 17.

For at least the above reasons, claim 17 is not made obvious by Richter and Kruger, and is believed to be allowable independently of allowable base claim 16.

Claim 18 is further allowable independently of allowable base claim 16 as reciting “upsetting the metal around first and second ends of the metal rod.” In contrast, Richter provides absolutely no teaching as to conditioning the end of the aluminum rod 12. Rather, Richter only teaches swaging the annular plug members 12a and 12b onto the aluminum rod 12. Thus, Richter clearly cannot disclose or suggest “upsetting the metal,” as reciting in claim 18.

Kruger cannot provide the deficiencies of Richter at least because Kruger also provides absolutely no teaching as to conditioning the fastener 28 except the base run 30 being “bent in the form of a sine wave.” Thus, Kruger also clearly cannot disclose or suggest “upsetting the metal,” as reciting in claim 18.

For at least the above reasons, claim 18 is not made obvious by Richter and Kruger, and is believed to be allowable independently of allowable claim 17 and allowable base claim 16.

Claim 19 is further allowable independently of allowable base claim 16 as reciting “forming a second tubular aperture therein that is of larger diameter and is substantially concentric with a first tubular aperture having the metal rod fused therein” as to both the support base and the mounting bracket.

Claim 19 differs in scope from allowable claim 3 as discussed herein above. However, the above arguments and reasons for allowance directed to claim 3 are sufficiently applicable to claim 19 as to make repetition unnecessary. Thus, for each of the reasons above, claim 19 is believed to be allowable independently of allowable base claim 16.

As discussed herein above regarding claim 3, Richter only teaches the support plate 13 having a "sleeve 14" having a constant inner diameter from the opening to the floor to receive the annular plug member 12b. Instead, Richer teaches the annular plug member 12b being stepped with a first larger diameter to mate with the "sleeve 14," and a second smaller diameter to mate with the corrugated plastic tube 11.

Kruger cannot provide the deficiencies of Richter at least because Kruger also provides absolutely no teaching as to any tubular aperture. Rather, Kruger only teaches a pair of apertures 22 for the fastener 28. Thus, Kruger also clearly cannot disclose or suggest "forming a second tubular aperture therein that is of larger diameter and is substantially concentric with a first tubular aperture having the metal rod fused therein," as reciting in claim 19.

For at least the above reasons, claim 19 is not made obvious by Richter and Kruger, and is believed to be allowable independently of allowable claims 17 and 18, and allowable base claim 16.

Claim 20 is further allowable independently of allowable base claim 16 as reciting "aluminum welding the first and second ends of the metal rod in the respective tubular apertures of the support base and mounting bracket."

Claim 20 differs in scope from allowable claim 4. However, the above arguments and reasons for allowance directed to claim 4 are sufficiently applicable to claim 20 as to make repetition unnecessary. Thus, for each of the reasons above, claim 20 is believed to be allowable independently of allowable base claim 16.

As discussed herein above regarding claim 4, Richter only teaches the ends of the aluminum rod 12 being "swaged" into the respective annular plug members 12a and 12b, with the annular plug members 12a and 12b being "firmly connected" in an unknown manner to the support plate 13. See, e.g., Figure 2.

Kruger only teaches the acetate or other plastic clamping panel 20 being "welded" to the acetate or other plastic flap 16. As taught by Kruger, the metal base run 30 of the fastener 28 is not welded to either the clamping panel 20 or the flap 16.

Thus, Kruger fails to provide the deficiencies of Richter as to "aluminum welding the first and second ends of the metal rod in the respective tubular apertures of the support base and mounting bracket," as recited in claim 20.

For at least the above reasons, claim 20 is not made obvious by Richter and Kruger, and is believed to be allowable independently of allowable base claim 16.

Official Notice

5 "Official Notice" was made that it would have been obvious to one having ordinary skill in the art to have made the device and its parts of any suitable material or method of forming them from any suitable material in order to easily attach the components to each other.

The applicant takes exception to such "Official Notice." Richter showed absolutely no suggestion that the aluminum rod 12 be "fused" or "welded" to the sleeves 5 and 14. Rather, Richter was required to "swage" the rod 12 to the annular plug members 12a and 12b, then connect the
10 annular plug members 12a and 12b in an unknown manner to the support plate 13. See, e.g., column 4, lines 33-35; and Figure 2.

Kruger was required to form the base run 30 of the fastener 28 into the form of a "sine wave." Column 2, lines 46-52. This need to "further immobilizes the fastener" emphasizes the fact that Kruger could not weld the metal base run 30 of the fastener 28 to either the clamping panel
15 20 or the flap 16. Instead, the base run 30 of the fastener 28 must be bent in to a sine wave to keep from rotating between the clamping panel 20 and the flap 16.

Thus, both Richter and Kruger teach away from "fusing" or "welding" a metal rod to an "ultrasonically weldable plastic material" as recited, for example, in claim 5. Clearly, because both the references cited by the Office Action teach away from the combination, such "Official Notice"
20 is made in error.

Richter and Kruger obviously represent the level of ordinary skill in the art at the time the invention was made. However, as discussed above, both Richter and Kruger teach away from "fusing" or "welding" a metal rod to an "ultrasonically weldable plastic material" as recited, for example, in claim 5. Thus, clearly it was not obvious to one of ordinary skill in the art at the time
25 the invention was made to "fuse" or "weld" a metal rod to an "ultrasonically weldable plastic material" as recited, for example, in claim 5.

The court in *In re Leshin* required the article to be of a type that was made of the same material prior to the invention. *In re Leshin*, 125 USPQ 416 (selection of a known plastic to make a container of a type that was made of plastics prior to the invention was held to be obvious).

Here, in contrast to *In re Leshin*, the examiner has not shown any support that the flexible support apparatus of the invention has ever been made of the same materials prior to the invention.

Furthermore, the examiner and Board in *In re Fine* asserted that it would have been within
5 the skill of the art to substitute one type of detector for another in the system of the primary reference. However the court found there was no support or explanation of this conclusion and **reversed**. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) (citing *In re Leshin*, 125 USPQ 416).

Here, similarly to in *In re Fine*, the Office Action does not presents the required support
10 or explanation for concluding that it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the materials recited in the claims. In fact, both Richter and Kruger **teach away** from “fusing” or “welding” a metal rod to an “ultrasonically weldable plastic material” as recited, for example, in claim 5.

Thus, for each of the above reasons, the “Official Notice” is not believed to be effective, and
15 the applicant respectfully reconsideration and withdrawal thereof.

Claims 7, 11 and 12 were rejected under 35 USC § 103(a) over US Patent 6,749,160 to Richter in view of US Patent 4,020,575 to Kruger, et al., and further in view of US Patent 6,637,642 to Lingnau.

Claim 7 depends from base claim 1 which is not made obvious by Richter, as discussed above.
20 As also discussed above, Kruger fails to provide the deficiencies of Richter.

Additionally, Lingnau fails to provide the deficiencies of both Richter and Kruger as to claim 7. Contrary to the examiner’s belief, Lingnau fails to disclose or suggest the “upset metal finish” of the first and second ends of the metal rod, as recited in claim 7.

Rather, Lingnau only teaches a solid state welding process that combines the processes of
25 induction welding and friction welding. Column 5, lines 15-18 (“The improved solid state welding process of this invention advantageously combines the processes of induction welding and friction welding to create a new solid state welding process which is superior to both of these processes.”)

Thus, Lingnau does not even discuss the ultrasonic welding process of the present invention between a metal rod and an ultrasonically weldable plastic material, as discussed in
30 claim 5.

Furthermore, the cited portion of Lingnau: column 8, lines 6-24 (reproduced herein below), recites only choice of a shielding gas, and induction coil features:

Although the most logical choice of a shielding gas is argon, experimentation has shown that argon causes arcing near the end of the heating cycle presumably due to the combined effects of the electric field from the coil and the infrared radiation from the faying surfaces. It has been found that nitrogen as a shielding gas eliminates arcing. Arcing may also be prevented by coating the induction coil with a high dielectric strength electrical insulator. It is critical that the induction coil be carefully designed to develop a uniform induced current density across the faying surfaces. Experimentation has shown that the geometry of the flash upset and the finish weld profile are strongly affected by the dimensions of the coil relative to the tube dimensions as discussed more fully herein below. As set forth above, however, the overall form of the flash upset is completely different from that produced by conventional frictional welding and the flash is substantially reduced by the solid state welding method of this invention. Column 8, lines 6-24.

The only reference to "upset" in the above portion of Lingnau cited in the Office Action uses the term "upset" in describing the overall form of the "flash upset." Column 8, lines 19-24 (reproduce above). As taught by Lingnau, the "flash upset" is only the "volume of ejected metal" at the weld due to the direct energy input of induction heating the surfaces to be welded. See, e.g., column 4, lines 60-66, which is reproduced herein below:

As set forth below, the improved solid state welding process of this invention results in a much smaller volume of ejected metal commonly known as "flash" or "upset" by virtue of the direct energy input of induction heating the surfaces to be welded which conventionally must be generated by friction heating of the rubbing surfaces. Column 4, lines 60-66 (emphasis added).

Thus, Lingnau clearly does not disclose or suggest any "upset metal finish" of the first and second ends of the metal rod for welding directly to the support base and the mounting bracket, as recited in claim 7.

For at least the above reasons, claim 7 is allowable over Richter in view of both Kruger and Lingnau.

Claims 11 and 12 depend from base claim 9 which is not made obvious by Richter, as discussed above. As also discussed above, Kruger fails to provide the deficiencies of Richter.

Claims 11 differs in scope from allowable claim 7. However, the above arguments directed to claim 7 are sufficiently applicable to claim 11 as to make repetition unnecessary. Thus, for each of the reasons above, claim 11 is believed to be allowable.

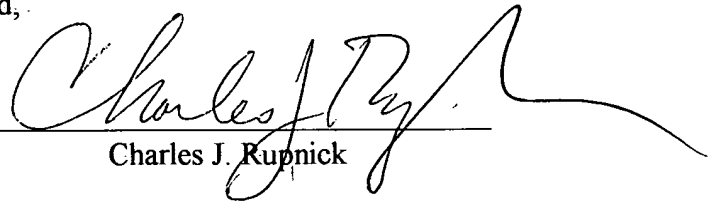
Claim 12 is allowable at least as depending from allowable claim 11 and allowable base claim 9.

The claims now being in form for allowance, reconsideration and allowance is respectfully requested.

If the examiner has questions or wishes to discuss any aspect of the case, the examiner is encouraged to contact the undersigned at the telephone number given below.

Respectfully submitted,

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